

ABSTRACT

The present invention provides a process for producing a polyurethane foam, which comprises allowing  
5 an organic polyisocyanate component to react with a polyol component in the presence of a catalyst with water as a foaming agent, wherein the polyol component comprises at least 30% by weight of a copolymerized lactone polyol having a hydroxyl value of 20 to 350 KOHmg/g and being in the form  
10 of a liquid at an ordinary temperature, the copolymerized lactone polyol is obtained by ring opening copolymerization of  $\epsilon$ -caprolactone and  $\delta$ -valerolactone in a molar ratio [ $\epsilon$ -caprolactone/ $\delta$ -valerolactone] of 80/20 to 20/80 with a low molecular weight compound having at least two active  
15 hydrogen groups as an initiator; and the hydroxyl value of the polyol component is 40 to 400 KOHmg/g.

Thus, a soft polyurethane foam excellent in mechanical properties can be produced with the use of water only as a foaming agent without the use of as a foaming  
20 agent, chlorofluorocarbons causing ozone layer destruction and further without the use of low-boiling point organic solvents inviting the danger of fire.